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Europe, along the Rhine and its tributaries, in Switzerland and the Pyrenees. In America it is not uncommon, New York State leading with four or five stations in the western and central part, Niagara Falls being the best known. It has also been found in the mountains of Virginia, and in Michigan, Ohio, and Missouri. It occurs at several stations in Ontario, and in the Rocky Mountains from British Columbia to Idaho and Montana, and from Washington to California. Its nearest relative seems to be a Mexican species, *F. insignis* Sch. from Mt. Orizaba, of which the fruit is unknown.—*E. G. Britton.*

ON THE GENUS *FISSIDENS*, BY ERNEST STANLEY SALMON, ANN. OF BOT. 13: 103-130, *PLATES* 5-7, MARCH, 1899.

“THE structure of the leaf in the genus *Fissidens* is generally described as quite anomalous amongst mosses.”

After describing this structure, the author proceeds to explain the three principal theories which have been advanced to explain the morphology. The first one, accepted up to 1819, held that the leaf corresponds to that of other mosses, and that the sheathing part results from a split in the thickness of the leaf. The second was that of Robert Brown, published in 1819, which held that the double division of the leaf is its true blade, and the deviation from the normal structure is in the greater compression of the leaf and in the addition of a dorsal and terminal wing. “In support of this view it may be observed that in the lower leaves of the stem both the additional wings are greatly reduced in size, and in some cases entirely wanting, as they are universally in the perigonal leaves, which likewise have the more ordinary form, being only moderately concave and not even navicular.” This view was accepted by Bruch and Schimper, and has been followed by Limpricht and others. Lindberg advanced the third theory, and has been followed by Braithwaite, stating that the whole expansion of the leaf is the true leaf, with the exception of one of the wings of the sheathing part, which is considered a stipule.

In order to prove which of these theories is correct, Mr. Salmon has studied the structure of the vein of the leaves of 18 species of *Fissidens* and those of similar leaves in *Bryoxiphium*, *Sorapilla* and *Diplophyllum*, and compared them with leaves of *Polytrichum*, *Catharinea*, *Pottia*, *Barbula* and *Tortula*, such of them as have outgrowths or lamellæ on their leaves. He con-

cludes that the structure of the vein and the occasional differentiation of the line of suture between the vaginant lamina and the apical wing, notably in *F. Floridanus*, proves Robert Brown's theory to have been correct. His sections and figures include six North American species of *Fissidens*, as follows: *bryoides*, *decepiens*, *incurvus*, *Floridanus*, *grandifrons* and *taxifolius*; also *Catharinea angustata*, *Polytrichum formosum*, *Pottia cavifolia*, *Barbula chloronotis*, and *Bryoxiphium Norvegicum*. The plates are excellent, and the whole study is eminently satisfactory to all students of this genus, as showing what morphology can do to help us in classification.—*E. G. Britton*.

NOTE ON CINCLIDOTUS FONTINALOIDES.

IN THE month of July, 1869, the writer made a boat voyage around the northeast coast of Lake Superior. On the 27th of that month he collected in a brook thirty miles west of Michipicoten. The gatherings were submitted to careful examination by myself, but as many species were found that I had never before seen, and, being without books, I could do nothing with them. In 1871, through Mrs. Roy, of Owen Sound, Ontario, I opened up a correspondence with Prof. James. The specimens found on the rocks in the brook were submitted to him and named *Cinclidotus fontinaloides*, but sterile.

Later I may have submitted them to Austin, and from him got the name *Racomitrium aciculare*, or I may have named them so myself; but at any rate that was the second name.

Still unsatisfied, I sent part of the original specimen to Dr. Kindberg, who named it *Grimmia apocarpa*, var. *rivularis*. Within the last month Mrs. Britton has confirmed the later determination, so that *Cinclidotus fontinaloides*, as far as the writer's specimens are concerned, has to be eliminated from the North American Flora.—*John Macoun, Ottawa, Canada, February 23d, 1900.*

[A NOTE.—A search has been made for the original specimens on which the note in Lesquereux and James' Manual was founded, but they are not to be found in the James collection. Whether they were returned to Mrs. Roy or sent to the Lesquereux herbarium, remains yet to be discovered. At any rate nothing exists in any collection thus far made to show that *Cinclidotus fontinaloides* has been thus far found in America.—*E. G. BRITTON.*]